

CLAIMS

1. A method for providing a set of travel options comprises:  
reducing a larger set of travel options to a smaller set of diverse travel options.

2. The method of claim 1 wherein reducing a larger set of travel options to a smaller set of diverse travel options comprises:  
generating one or more travel options consistent for each of a diversity of travel requirements.

3. The method of claim 1 wherein reducing a larger set of travel options to a smaller set of diverse travel options comprises:  
generating one or more desired travel options consistent with a diversity of travel requirements.

4. The method of claim 1 wherein reducing a larger set of travel options to a smaller set of diverse travel options further comprises:  
generating one or more of the best travel options consistent with a diversity of travel requirements where the travel requirements are dependent on the original set of travel options.

5. The method of claim 1 wherein the set of travel requirements includes requirements for different airlines.

6. The method of claim 1 wherein the set of travel requirements includes requirements for travel times of day,

3 travel dates, numbers of stops, arrival or departure airports,  
4 and cabin class.

1 7. The method of claim 1 wherein the set of travel  
2 requirements includes requirements that are combinations of other  
3 requirements.

1 8. The method of claim 7 wherein the set of travel  
2 requirement combinations include outbound and return travel dates  
3 or times of day.

1 9. The method of claim 7 wherein the set of travel  
2 requirement combinations include airlines and number of stops,  
3 arrival and departure airports.

10. A method for reducing a larger set of travel options to  
a smaller set of diverse travel options comprises:  
generating one or more travel options that are best  
for each of a set of travel preference functions.

11. The method of claim 10 wherein the travel preference  
functions include functions that optimize cost or functions that  
optimize convenience.

1 12. The method of claim 10 wherein the travel preference  
2 functions include both functions that optimize cost and functions  
3 that optimize convenience and functions that optimize  
4 combinations of cost and convenience.

1 13. A method generating a diverse list of N travel options  
2 Rts from a larger list of travel options Ts, comprises:  
3 generating a prioritized ordered list of requirements

4 Rs;  
5 sorting the list of travel options Ts by an ordering  
6 function F to produce a best-first ordered list Ts2 with the list  
7 of options being optimized travel options for a set of travel  
8 requirements R in accordance with the ordering function F.

1 14. The method of claim 13 further comprising:  
2 initializing the list of result travel options RTs to  
3 be empty; and if the remaining list of requirements Rs is empty,  
4 returning an ordered list of diverse travel options  
5 Rts.

1 15. The method of claim 14 further comprising:  
2 initializing the list of result travel options RTs to  
3 be empty; and if the remaining list of requirements Rs is not  
4 empty,  
5 selecting a first travel requirement R from the ordered  
6 list of requirements (Rs); and  
7 removing a requirement R from the requirement list  
8 (Rs).

1 16. The method of claim 15 further comprising:  
2 finding a first option T in a best-first ordered list  
3 (Ts2) that satisfies travel requirement R.

1 17. The method of claim 16 further comprising:  
2 determine whether any option in the Ts2 satisfies the  
3 travel requirement.

1 18. The method of claim 17 wherein if no option in Ts2  
2 satisfies R, the method further comprises:  
3 checking if the remaining list of requirements Rs is

4 *Bl 200/*  
*empty.*

*Sub 05*  
1 19 The method of claim 18 wherein if the diversity process  
2 determines if a travel option T is not already in the result list  
3 Rts,  
4 adding the travel option T to end of the result travel  
5 option list Rts; and  
6 determining if the size of the travel option list RTs  
7 is equal to or greater than N the process in order to return the  
8 ordered list of diverse travel options.

*Bl 20*  
1 21. The method of claim 15 further comprising:  
2 determining for each travel requirement R2 in Rs,  
3 whether the requirement R2 includes a requirement R, and T  
4 satisfies R2, and if T satisfies R2;  
5 removing R2 from Rs.

*Bl 21*  
1 22. A travel planning system that outputs a set of travel  
2 options smaller than a complete set of travel options that the  
3 server has computed by pruning the larger set of options to a  
4 smaller set with a diversity-based pruning process.

*Sub 06*  
1 23. The travel planning system of claim 13 wherein the  
2 diversity-based pruning process comprises instructions to cause  
3 the system to:  
4 generate a diverse list of N travel options Rts from a  
5 larger list of travel options Ts,  
6 generate a prioritized ordered list of requirements Rs;  
7 sort the list of travel options Ts by an ordering  
8 function F to produce a best-first ordered list Ts2 with the list  
9 of options being optimized travel options for a set of travel  
10 requirements R in accordance with the ordering function F.

